

Application No: 10/781,979
Amendment Dated: May 12, 2006
Reply to Office Action of February 14, 2006
REPLACEMENT SHEET

axmi008 ---MKKMSPYQNKNEYEILESSSNNNTNTPNRYP---FANNRDMSTMS-----WNDCQGI 48
cry1Aa -----MDNNPNINECIPYN---CLSNPE-----VEVL 24
cry1Ac -----MDNNPNINECIPYN---CLSNPE-----VEVL 24
cry1Ia -----MKLKNQDKHQSFSSNAKVDKISTDS---LKNETDIELQINIHEDCLKMSEYE 49
cry2Aa -----MNNVLNSGRTTICDAYNVVAHDPPFSFEHKSOLDTIQKEWMEWKRTDHSLYVAPVV 54
cry3Aa1 MIRKGGKRMNPNNRSEHDTIKTTENNEVPTNHVQYPLAETPNPTLEDLNYKEFLRMTADN 60
cry3Bb -----MNPNNRSEHDTIKVTPNSELQTNHNQYPLADNPSTLEELNYKEFLRMTEDS 52
cry4Aa -----MNPYQNKNEYETLNASQKKLNISNNYTRYPIENSPKQLLQSTNYKDWLNMCCQN 54
cry4Ba -----MN-----SGYPLANDLQSGMKNTNYKDWLAMCENN 30
cry6Aa -----MIIDSKTTLPRLSHLIHTIKLSNKKYGPDMTNGNQFIISKQEWATIGAYI 51
cry7Aa -----MNLNNLD---GYEDSNRTLNNSLNYP---TQKALSPSLKMNMYQDFLSITERE 47
cry8Aa -----MSPNNQNEYEIIDATPSTSVSSDSNRYPFANEPTDALQNMNYKDYLKMSGGE 52
cry10Aa -----MNPYQNKNEYEIFNAPSNGFSKSNYSRYPLANKPNQPLKNTNYKDWLNVQDN 54
cry16Aa -----MHYYGNRNEYDILNASSNDSNMSNTYPRYPLANPQQDLMQNTNYKDWLNVCEGY 54
cry19Ba -----MNSYQNKNEYEILDAKRNTCHMSNCYPKYPLANDPQMYLRNTHYKDWINMCEEA 54
cry24Aa -----MNQYQNKNEYEILESSQNNMMPNRYP---FADDPNAVMMKNGNYKDWVNECEGS 51
cry25Aa -----MNPYQNKSECEILNAPLNNINMPNRYP---FANDPNAVMMKNGNYKDWLNECDGI 51
cry39Aa1 -----NSYENKNEYEILNDSKK-SNMSNPYLRYPLANDSLASMQNTNYKDWLTMCDDRT 52
cry40Aa1 -----NSYENKNEYEILESSSNNNTNMPNRYP---FANDRDMSTMS-----FNDCQGI 44

axmi008 S-----WDEIWESVETITSIGINLIEFVIEPSLGGINTLLSIIGKLIPTNRQT- 96
cry1Aa G-----GERIETGYTPIDISLSLTQFLLS-EF-VPGAGFVLGLVDIIWIGIFGPSQ--- 72
cry1Ac G-----GERIETGYTPIDISLSLTQFLLS-EF-VPGAGFVLGLVDIIWIGIFGPSQ--- 72
cry1Ia N-----VEPFVS-ASTIQTGIGIAGKILG-TLGVVPFAGQVASLYSFILGELWP-KGK- 98
cry2Aa G-----TVSSFLKKVGSLLG-----KRILSELWGIIFPSGSTN 88
cry3Aa1 N-----TEALDSSTTKDVIQKGISVVGDLG-VVGFPFGGALVSFYTNFLNTIWPSE--- 111
cry3Bb S-----TEVLNSTVKDAVGIGISVVGQILG-VVGVPFAGALTSFYQSFLNTIWPDA-- 104
cry4Aa QQYGGDFETFDISG---ELSAITIVVGTVLTFGFTTPLGLALIGFGLTLPVLFPAQDQS 111
cry4Ba QQYG-VNPAAINSS---SVSTALKVAGAILK---FVNPPAGTVLTVLSAVLPILWPTNTPT 84
cry6Aa Q-----TGLGLPVNEQQLRTHVNLSQDISIPSDFSQLYDVYCSDKTS- 93
cry7Aa Q-----PEALASGNTAINTVSVTGATLS-ALGVPGASFITNFYLKIAGLLWPENGK- 98
cry8Aa NPFL-FGNPETFIS-SSTIQTGIGIVGRILG-ALGVPFASQIASFYFIVGQLWPSKSV- 108
cry10Aa QQYGNNAGNFASSETIVGVSAGIIVVGTM LG-AFAAPVLAAGIISFGTLLPIFWQGSDDPA 113
cry16Aa -----HIENPREASVRAGLGKGLIVSTIVGF-FGGSIIIDTIGLFYQISELLWPEDDT- 107
cry19Ba -----SYASSGPSQL---FKVGSIVAKILG-----MPEVGPILLSWMSLFWPTIEE- 99
cry24Aa N-----ISPSPAAITSKIVSIVLKTAKAVASSLADSIKSSLGISKTITENN- 99
cry25Aa T-----PSIFGTGLVASIVISTIN-LATSPSIGDAFALVSSIGEYWPETKTS- 98
cry39Aa1 -----DTDVLSSRGA---VSTGVGMLSTILSL-FGIPLIGEGIDLLLGAADFLWPESDGG 103
cry40Aa1 S-----WDEIWESAETITSIGIDLIEFLMEPSLGGINTLFSIIGKLIPTNHQS- 92

axmi008 ---VSALSICDLLSIIRKEVADSVLSDAIADF-DGKLKNYREYYLSYLGAWLKD GKPLQK 152
cry1Aa ---WDAFPVQIEQLINQRIEFARNQAISRL--EGLSNLYQIYAESFREWEADPT---N 123
cry1Ac ---WDAFLVQIEQLINQRIEFARNQAISRL--EGLSNLYQIYAESFREWEADPT---N 123
cry1Ia ---NQWEIFMEHVEEIIINQKISTYARNKALTDL--KGLGDALAVYHDSLESWVGNRN---N 151
cry2Aa ---LMQDILRETEQFLNQRLNTDTLARVNAEL--IGLQANIREFNQQVDNFLNPTQNPVP 143
cry3Aa1 ---DPWKAFMEQVEALMDQKIADYAKNKALAE--QGLQNNVEDYVSALSSWQKNPVSSRN 167
cry3Bb ---DPWKAFMAQVEVLIDKKIEEYAKSKALAE--QGLQNNFEDYVNALNSWKKTPLSLRS 160
cry4Aa ---NTWSDFITQTKNIIKKEIASTYISNANKIL--NRSFNVISTYHNHLKTWENNPNPQ-N 166
cry4Ba PERVWNDFMNTNTGNLIDQTVAYVRTDANAKM--TVVKDYLDQYTTKFNTWKREPNNSQY 142
cry6Aa -AEWWNKNLPLIIKSANDIASYGFKVAGDPS--IKKDG YFKKLQDELDNIVDNNS---- 146
cry7Aa --I-WDEFMTEVEALIDQKIEEYVRNKAIAEL--DGLGSALDKYQKALADWLKGQD---D 150
cry8Aa --DIWGEIMERVEELVDQKIEKYVKDKALAE--KGLGNALDVYQQSLEDWLENRN---D 161
cry10Aa N--VWQDLLN-IGGRPIQEIKNIIINVLTISIV--TPIKNQLDKYQEFFDKWEP-ARTHAN 167
cry16Aa QQYTWDIMNHVEDLIDKRITTEVIRGNARTL--ADLQGVDDYNNWLKKWKDDPKSTGN 165
cry19Ba KNTVWEDMIKYVANLLKQELTNDTLNRATSNL--SGLNESLNIYNRALAANKQKNFAS 157
cry24Aa ---VSQVSMVQVHQIINRRIQETIILDGESSL-NGLVAIYNRDYLGALAEWNNN----K 150
cry25Aa ----FPLSVADVNRILREALDQNAINRATGKFN-GLMDTYNTVYLKNLQDWYDTRIPANP 153
cry39Aa1 HQYTWEDLMNHIEELMDERLETEKRTTALDDL--RGLKALLGLFRDAFDSWEKNQNDPIA 161
cry40Aa1 ---VSALSICDLLSIIRKEVADSVLSDAICRFLDGKLKNYREYYLPYLEAWLKD GKPLQK 149

Fig. 1A

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axmi008	TNNSDI-GQLVYYFKLSERDFNEILGGSLSRN-----NAQVLLLPFTAQAANVQLLLLRD	206
cry1Aa	PALR---EEMRIQFNDMNSALTTAIPLLAVQ-----NYQVPLLSVYVQAANLHLSVLRD	174
cry1Ac	PALR---EEMRIQFNDMNSALTTAIPLFAVQ-----NYQVPLLSVYVQAANLHLSVLRD	174
cry1Ia	TRAR---SVVKSQYIALELMFVQKLPSFAVS-----GEEVPLLPITYAQAANLHLLLRD	202
cry2Aa	LSIT-----SSVNTMQQLFLNRLPQFIQ-----YQLLLPLFAQAANMHLSFIRD	190
cry3Aa1	PHSQ---GRIRELFSQAESHFRNSMPSFAIS-----GYEVLFLTITYAQAANTHLFLLKD	218
cry3Bb	KRSQ---DRIRELFSQAESHFRNSMPSFAVS-----KFEVLFLPTYAQAANTHLLLLRD	211
cry4Aa	TQDV---RTQIQLVHYHFQNVIPELVNSCPPNPSDCDYINILVLSSYAQAANLHLTVLNQ	223
cry4Ba	RTAV---ITQFNLTSAKLRATAVYFSNLVG-----YELLLLPITYAQAANFNLLLRD	191
cry6Aa	-----DDDAIAKAIKDFKARCG-----ILIKEAKQYEEAAKNIVTSLD	184
cry7Aa	PEAI---LSVATEFRIIDSLFEFSMPSFKVT-----GYEIPLLTVYAQAANLHLALLRD	201
cry8Aa	ARTR---SVVSNOFIALDLNLFVSSIPSAVS-----GHEVLLLVYAQAANLHLLLRD	212
cry10Aa	AKAV---HDLFTTLEPIIDKDLMLKNNAS-----YRIPTLPAYAQIATWHNLNLLKH	216
cry16Aa	LSTL---VTKFTALDSDFNGAIRTVNNQGS-----GYELLLPVYAQIANLHLLLRD	216
cry19Ba	GELI---RSYINDLHILFTRDIQSDFSLG-----GYETVLLPSYASAANLHLLLRD	206
cry24Aa	SNINYQ-TNVAEAFKTVREFFTKLGIYRTS-----SSQITLLPTFTQAANLHLSMLRD	204
cry25Aa	QGDSQLREARRSLEEIERDFRKLAGFEAEAG-----SQIVLLPIYAQAANIHLILKD	208
cry39Aa1	KNRV---GGYFEDVHTHFVKDMASIFSAT-----NYEVLPLPVYAQAANLHLLLRD	210
cry40Aa1	TNNSDI-GQLVKYFELSERDFNEILGGSLLARN-----NAQILLLPYFCASCKQLLLLRD	203

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axmi008	AVQYKAQWFPFLSAENVRSELISPNSGCDFTGDYERLCKCKTAEYTNCLYWYQVGLNQI	266
cry1Aa	VSVFGQRWGFDAAT-----INSRYNDLTRLIGNYTDYAVRWYNTGLERV	218
cry1Ac	VSVFGQRWGFDAAT-----INSRYNDLTRLIGNYTDYAVRWYNTGLERV	218
cry1Ia	ASIFGKEWGLSSE-----ISTFYNRQVERAGDYSCHVKWYSTGLNNL	246
cry2Aa	VILNADEWGISAAT-----LRTYRDYLRNYTRDYSNYCINTYQTAFRGL	234
cry3Aa1	AQIYGEEWGYEKED-----IAEFYKRQLKLTQEYTDHCVKWYNVGLDKL	262
cry3Bb	AQVFGEWGYSSD-----VAEFYHRQLKLTQOYTDHCVNWNVNLGL	255
cry4Aa	AVKFEAYLKNNRQFDYLEP-----LPTAIDYYPVLTKAIEDYTNVCVTTYKGLNLI	275
cry4Ba	G-----LINAQEWSLAR-----SAGDQLYNTMVQYTKYIAHSITWYNKGLDVL	235
cry6Aa	QFLHGDQKLEGVIN-----IQKRLKEVQTALNQAHGESSPAHKELLEKV	229
cry7Aa	STLYGDKWGFTQNN-----IEENYNRQKKRISEYSDHCTKWYNSGLSRL	245
cry8Aa	ASIFGEEWGFTPGE-----ISRFYNRQVQLTAEYSDYCVKWYKIGLDKL	256
cry10Aa	AATYYNIWLQNQGPNST-----FNSSNYQGYLKRKIQEYTDYCIQTYNAGLTM	267
cry16Aa	AQIYGDKWWSARAN-----ARDNYYQIQLEKTEKEYTEYCINWYNKGLNDF	261
cry19Ba	VAIYG-KELGYPT-----DVEFYNEQKYTEKYSNYCVNTYKLSLEK	250
cry24Aa	AVMYQEGWNLQSHIN-----YSKELDDALEDYTNVCVEVYTKGLNAL	246
cry25Aa	AMQFRTDLGLIRPVGVPITTS-----AEDPFESEFLLRKIKYTDHCISYDDGLAKI	260
cry39Aa1	GVIYG-SRWGIAP-----AADFYHDQLLKYTAIYANHCVTWYNNGLAQ	253
cry40Aa1	AVQYEEQWFPFLSAENVRSELISPNSGCDFTGDYERLCKCKIAEYTDYCEYWYQAGLNQI	263

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axmi008	KQGGTGAD---TWSKFNKFRREMTLAVLDIIAIFPTYDFEKYPLP-----THVELTR	315
cry1Aa	WGPDSR-----DWVRYNQFRRELTTLVLDIVAFSNDYSSRRYPPIR-----TVSQLTR	265
cry1Ac	WGPDSR-----DWVRYNQFRRELTTLVLDIVAFPNYDSRRYPPIR-----TVSQLTR	265
cry1Ia	RGTNAE-----SWVRYNQFRDMTLMVLDLVALFSPYDTQMYPIK-----TTAQLTR	293
cry2Aa	NT-----RLHDMLEFRTYMFLNVFEYVSIWSLFKYQSLMVS-----SGA	273
cry3Aa1	RGSSYE-----SWVNFNRYRREMTLTLVLDLIALFPLYDVRLYPKE-----VKTELTR	309
cry3Bb	RGSTYD-----AWVKFNFRREMTLTLVLDLIVLFPFYDIRLYSKG-----VKTELTR	302
cry4Aa	KTPDSNLDGNINWNTYNTYRTKMTTAVLDLVALFPNYDVGYKYPG-----VQSELTR	328
cry4Ba	RNKSNG-----QWITFNDYKREMTIQVLDLIALFASYDPRYPADKIDNTKLSKTEFTR	289
cry6Aa	KN-----LKTTLERTIKAEQDLEKKVEYSFLLGPLL-----FVVY	265
cry7Aa	NGSTYE-----QWINYNRFRREMILMALDLVAVFPFHDPRYSME-----TSTQLTR	292
cry8Aa	KGTTSK-----SWLNYHQFRREMTLLVLDLVALFPNYDTHMYPIE-----TTAQLTR	303
cry10Aa	RTNTNA-----TWNMYNTYRLEMTLTLVLDLIALFPNYDPEKYPIG-----VKSELTR	314
cry16Aa	R-----TAGQWVNFNRYRREMTLTLVLDIISMFPYIDARLYPT-----EVKTELTR	306
cry19Ba	K-----QIG-WSDFNRYRREMTLSVLDLIALFPLYDTGLYPSK-----DGKIHVKAELTR	299
cry24Aa	R--GSTAI---DWLEFNSFRDMTLMVLDLVAIFPNYNPVRYPLS-----TKISLSR	293
cry25Aa	RSRGS DGE---TWWEFNKFRREMTLTLVLDLVALYPHNIKLYPI-----TQTELSR	309
cry39Aa1	KE----LFAKSPNWNRFNAYRRDMTITVLDLIALFPTYDARLYTK-----PIKTELTR	302
cry40Aa1	KQAGTGAD---TWAKFNKFRREMTLTLVLDIIAIFQTYDFKKYPLP-----THVELTR	312

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Fig 1B

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axmi008	EIYTDVAGYSS-----GTYSWLRNWPNTFNGLANGTRGP-GLVTWLSKIGIYNEYVSRY	369
cry1Aa	EIYTNPVLENFDGS-----FRG--MAQRIEQNIRQP-HLMDILNSITIYTDVHRGF	313
cry1Ac	EIYTNPVLENFDGS-----FRG--SAQGIERSIRSP-HLMDILNSITIYTDVHRGF	313
cry1Ia	EVYTDAGTVHPPHSFTSTTWNNNAPSFAIEAAVVRNP-HLLDFLEQVTIYSLLS--R	350
cry2Aa	NLYASGSGPQQTQS-----FTAQNWPFYLSLFQVNSNYILSGISGTRLSITFPNIG	324
cry3Aa1	DVLTDPIVGVNNLR-----GYGTTFSNIEN-YIRKP-HLFDYLHRIQFHTRFQPGY	358
cry3Bb	DIFTDPIFSLNTLQ-----EYGPFFLSIEN-SIRKP-HLFDYLQGIEFHTRLQPGY	351
cry4Aa	EIYQVLN---FEES-----PYKYYDFQYQEDSLTRRP-HLFTWLDLSLNFYEKAQTTT	376
cry4Ba	EIYTAL-----VES-----PSSK-SIAALEAALTRDV-HLFTWLKRVDFWNTNTIYQD	334
cry6Aa	EILENTAVQHIKNQ-----IDEIKKQLDSAQHDLDRDVKIIGMLNSINTDI	311
cry7Aa	EVYTDPVSLISISNP-----DIGPSFSQMENTAIRTP-HLVYDYLDELIYTSKYKAF	342
cry8Aa	DVYTDPIAFNIVTSTGFCNPWSTHSGILFYEVENNVIRPP-HLFDILSSVEINTSRGGIT	362
cry10Aa	EVYTNVN-----SDTFRITTELENGLTRNP-TLFTWINQGRFYTRNSRDI	358
cry16Aa	EIYSDVINGEITYGL-----MTPYFVSFEKAESLYTRAP-HLFTWLKGRFVTVNS-ISKY	356
cry19Ba	EIYSDVINDHVYGL-----MVPYISFEHAESLYTRRP-HAFTWLKGRFVTVNS-INS	349
cry24Aa	KIYTDVPVGRDSDPS-FGDWTNTGRTLANFNDLREVTDSP-SLVKWLGDMTIYTGADISY	351
cry25Aa	VVYTDVPVGCFCGNRK-----SDIFSRNLFDYLENRLTRPR-EPFNYLNSVQLFASTVSNS	362
cry39Aa1	EIYSDVLNLDVYGV-----QQT--DLNKNEAAFTTRSP-HLVTRLRGDFDYTRTKYAY	351
cry40Aa1	EIYTDVAGYSS-----GTYSWLRNWPNTFNGLANGTRGP-GLVTWLSKIGIYNEYVSRY	366
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axmi008	FAG-----WVGTRHYEDYTKGNIGFQR-----MSGTTSNDLRNIDFQ---NADV	410
cry1Aa	N-----YWSGHQITASPVGFSGPEFAFPL-----FGNAGNAAPP-VLVSLTGLGIF	358
cry1Ac	Y-----YWSGHQIMASPVGFSGPEFTFPL-----YGTMGNAAPQQRIVAQLQGQVY	359
cry1Ia	WSNTQYMN-MWGGHKLEFRTIGGTNLNISTQ-----GSTNTSINPVTLPFTSRDVF	399
cry2Aa	GLPG-----STTHSLNSARVNYSGGVSSGLIG-----ATNLNHNFCSTVLPPLSTPF	373
cry3Aa1	YGNDSFN--YWSGNYVSTRPSIGSNDIITSPF-----YGNKSSEPQV--NLEFNGEKVY	408
cry3Bb	FGKDSFN--YWSGNYVETRPSIGSSKITITSPF-----YGDKSTEPVQ--KLSFDGQKVY	401
cry4Aa	NN-----FFTSHYNNMFHYTL-DNISQKSSV-----FGNHNVTDKLKS-LGLATNIYI	421
cry4Ba	LR-----FLSANKIGFSYTN-SSAMQESGI-----YGSSGFGSNLTHQIQLNSNVYK	380
cry6Aa	DN-----LYSQQEAIAKVFQKLQGIWATIG-----AQIENLRTTSL	347
cry7Aa	SHEIQPDLFYWSAHKVSFKKSEQSN-LYTTGI-----YGKTSGYISS-GAYSFHGNDIY	394
cry8Aa	LNNDAYIN-YWSGHTLKYRRADSTVITYA-----NYGRITSEKNSFALPLDRDIF	411
cry10Aa	LDPYDIF--SFTGNQMAFTHTN-DDRNIIWGA-----VHGNIISQDTSKVPFPYRNKPI	409
cry16Aa	WT-----FLSGGQNKYSYTN-NSSINEGSF-----RGQDTEYGGTSSITINIPNSYV	402
cry19Ba	WT-----FLSGGENRYFLTHGEGTIYNGPF-----LGQDTEYGGTSSYIDISNNSI	396
cry24Aa	RPT-----SPGDRIGVWYGNINAFYHTGRTDVVMFRQTGDTAYEDPSTFISNLYDDI	404
cry25Aa	NNGE-----VLRGNLNMKIMFEGGWATASRGDG---VTTGTPTFSTMDWSYGWGYPKHYA	413
cry39Aa1	WR-----YLAGHTNYFSFTG-NGTIYSSSF-----N-NWYDTEMTKSTINIPDYANI	396
cry40Aa1	FSG-----WVGTRHYEDYTTGNGNFQR-----MSGTTSNDLRDISFP---NSDI	407
axmi008	YKITS LAIMNLVGETTARPEYRVSKADFRVGGPDLNYDAGNGLSRMTIESTFPLVLHS	470
cry1Aa	RTLSSP---LYRRIILGSGPNNQELFVLDGTEFSFASLTTLNLPSTIYRQRTVDSLDEIP	415
cry1Ac	RTLSSP---LYRRPFN-IGINNQLSVLDGTEFAYG-TSSNLPSAVYRKSGTVDSLDEIP	414
cry1Ia	RTESLAGLNLFLTQPVNGVPRVDFHWKFVTHPIASDNFYYPGYAGIG--TQLQDSENELP	457
cry2Aa	VRSWLDSGTDREGVATSTNWQTESFQTTLSLRGAFSARGNSNYFPDYFIRNISGVPLVI	433
cry3Aa1	RAVANTNLAVWPS-AVYSGVTKEVFSQYNDQTEASTQTYDSKRNVG-AVS-WDSIDQLP	465
cry3Bb	RTIANTDVAAPNGKVYLGVTKVDFSQYDDQKNETSTQTYDSKRNG-HVSAQDSIDQLP	460
cry4Aa	FLLNVISLDNKY-LNDYNNISKMDFFITNGTRLLEKELTAGSGQITYDVNKNIFGLPILK	480
cry4Ba	TSITDTSSP-----SNRVTKMDFYKIDGT---LASYNSNITPTPEGLRTTFFGFSTNE	430
cry6Aa	QEVQSDDDADEIQIELEDASDAWLVAQEARDFTLNAYSTNSRQNLPIINVISDCNCSTT	407
cry7Aa	RTLAAPSVVVPYPTQN-YGVEQVEFYGVKGHVHYRGDNKYDL-----TYDSIDQLP	444
cry8Aa	EINSTVANLANYQKAYGVPGSWFHVMKRGTSSTTAYLYSKTHTALQGCTQVYESSDEIP	471
cry10Aa	DKVEIVRHR-----EYSDIIEYMIFFSNSSSE---VFRYSSNSTIENNYKRTDSYMIKQT	461
cry16Aa	YNLWTENYIYIPWGDVNVITKMNFSVTDNNSKELIYGAHRTNKPVRTDFDFLTNKEG	462
cry19Ba	YNLWTKNYEWIYPTDVPVITKINFSITDNSNSESIIYGAERMNKPVRTDFNLLNRAG	456
cry24Aa	YKLDLRAAAVSTIQGAMDTTFGVSSSRFFDIRGRNQLYQS-NKPYPSPITITFPGEES	463
cry25Aa	EITSRSQALPGLNNSIHVIVGDISFRAIGPGGQGDHFTSLPGGDMYDCGKVINPLEDYR	473
cry39Aa1	YKLWTKSYTNISPYTDPVGISQMFSLTNN---QQLTYTGTSAPKYPVRETFF-FEIPPTD	452
cry40Aa1	FKIESKAIMNLVGEINARPEYRVSRAEFSESTAFIYLYDAGNSGLSSMTITSKLPGIKNP	467

Fig. 1C

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axmi008 N-GVR-----GPSHRLS-----NAACVVYG--NSRVNVYGWHTSLKRENIIE 510
cry1Aa PQDNS-----VPPRAGFSHRLSHVTMLSQAAG--AVY--TLRAPTFWSQHRSAEFNNIIP 466
cry1Ac PQNNN-----VPPRQGFHRLSHVSMFRSGFSNSSVS--IIRAPMFSWIHRSAEFNNIIA 467
cry1Ia PEATG-----QPNYESYHRLSHIGLISASHVK-ALV--YS-----WTHRSADRTNTIE 503
cry2Aa RNEDLTR-----PLHYNQIRNIESPSGTPGGARAYLVSVHNRKNNIYAANENGTMIHILA 487
cry3Aa1 PETTD-----EPLEKGYSHQLNVMCFMQGSR-----GTIPVLTWTHKSVDFFNMID 513
cry3Bb PETTD-----EPLEKAYSHQLNYAECFLMQDRR-----GTIPFFTWTTHRSVDFFNTID 508
cry4Aa RRENQGNPTLFPTYDNYSHILSFIKSL SIPATYKTQV-----YTFAWTHSSVDPKNTIY 534
cry4Ba NTPNQ-----PTVNDYTHILSYIKTDVI--DYNSEN-----VSFAWTHKIVDPNNQIY 476
cry6Aa NMTSN-----QYSNPTNMTSNQYMI 428
cry7Aa PDGE-----PIHEKYTHRLCHATAIFKSTP--DYD--NATIPFSWTHRSAEYNNRIY 493
cry8Aa LDRT-----VPVAESYSHRLSHITSHSFSKNG-SAY--YGSFPVFWVWTHSADLNNTIY 522
cry10Aa WKNEE-----YGHTLSYIKTDNYIFSVVRERRR----VAFSWTHTSVDFQNTID 506
cry16Aa TELAK-----YNDYNHILSYMLINGETFGQKRHG-----YSFAFTHSSVDPNNTIA 508
cry19Ba NGPTT-----YNDYNHILSYMLINGETFGQKRHG-----YSFAFTHSSVDRYNTIV 502
cry24Aa EGNAN-----DYSHLLCDVKILQEDSSNICEG--RSSLLSHAWTHASLDNRNTIL 511
cry25Aa NSDHWIS-----DMMTINQSVQLASNPTQTFAFS-----ALSLGWHHSSAGNRNVYV 520
cry39Aa1 EKPLT-----YENYSHILSYMTS-AQHFQDKKIG-----YTFAWMHESVDFDNRVD 497
cry40Aa1 EPSYR-----DYSHRLS-----NAACVGAG--NSRINVYGWHTSMSKYNLIY 508

axmi008 ANQIT--QIPAVKSYLLQNYLANAYTYVIKGT-HTGGDLIRFLRTKSEYNAVYAGGGIRL 567
cry1Aa SSQIT--QIPLTKSTNLGS-----GTSVVKGPFGTGGDLRRTSPGQI---STLRVNITA 516
cry1Ac SDSIT--QIPAVKGNFLFN-----G-SVISGPGFTGGDLVRLNSSGNN---IQNRGYIEV 516
cry1Ia PNSIT--QIPLVKAFNLSS-----GAAVVRGPGFTGGDLRRTNTGTGTF---GDIRVNINP 553
cry2Aa PEDYTGTIISPIHATQVNN---QTRTFISEKFGNQGDSLRFEQSN-----TTA 532
cry3Aa1 SKKIT--QLPLVKAYKLQS-----GASVVAGPRFTGGDIIQCTENG-----SAATIVY 559
cry3Bb AEKIT--QLPVVKAYALSS-----GASIEGPGFTGGNLLFLKESN-----SIKFKV 555
cry4Aa THLTT--QIPAVKANSLGT-----ASKVVQGPFGHTGGDLIDFKDH-----FKITCQ 578
cry4Ba TDAIT--QIPAVKSNFLNA-----TAKVIKGPFGHTGGDLVALTSNGTL---SGRMEIQCK 526
cry6Aa SHEYT--SLPNNFMLS----- 443
cry7Aa PNKIT--KIPAVKMYKLDD-----PSTVVKGPFGTGGDLVKGSTGYI---GDIKATVNS 543
cry8Aa SDKIT--QIPAVKGDMLYL-----GGSVVQGPFGTGGDILKRTNPSIL---GTFAVTVNG 572
cry10Aa LDNIT--QIHALKALKVSS-----DSKIVKGPFGHTGGDLVLKDS-----MDFR 548
cry16Aa ANKIT--QIPVVKASSING-----SISIEKGPFGTGGDLVKMRADS-----GLTM 551
cry19Ba PDKIV--QIPAVKTNLVG-----ANIIKGPFGHTGGDLLKLEYER-----FLSL 543
cry24Aa PDEIT--QIPAVTAYELR-----GNSSVAGPGSTGGDLVKMS-----YHSVWS 553
cry25Aa YDKIT--QIPATKTVREHP-----MIKGPFGTGGDLADLSSNSD---ILQYDLRSD 566
cry39Aa1 PDKIT--QIPAVKGDYLYQ-----GYVKQGPFGHTGGDLVSMIRTD-----RLGI 539
cry40Aa1 PDKIT--QIPAVKAFDIS---DTGPGQVIAGPGHTGGNVVSLP-----YYSRLKIRL 555

axmi008 IINNKTAGQSYRIRFRYAADKAFFSVYLYPGWGSNRFVSLEKSYSGNYDDLK----- 621
cry1Aa PL-----SQRYRVIRIRYASTTNLQFHTSIDGRPINQGNFS---ATMSSGSNLQ----- 561
cry1Ac PIHFPSTSTRYRVIRYASVTPIHNLNVWGNSSIFSNTVP---ATATSLDNLQ----- 566
cry1Ia PF-----AQRYRVIRIRYASTDLQFHTSINGKAINQGNFS---ATMNRGEDLD----- 598
cry2Aa RYTLRGNGNSYNLYLRVSSIGNSTIRVTINGRVYTVSNVNTTTNNDGVNDNGAR----- 586
cry3Aa1 TP-DVSYSQKYRARIHYASTSQITFTLSLDGAPFNQYYFD---KTINKGDTLT----- 608
cry3Bb TLNSAALLQRYRVIRIRYASTTNLRLFVQNSNNDLVIYIN---KTMNKDDDLT----- 605
cry4Aa HSNF---QSYFIRIRIRYASNGSANRAVINLSIPGVAELG-MALNPTFSGTD---YTNLK 631
cry4Ba TSIFNDPTRSYGLRIRYAAN--SPIVLNVSYVLQGVSRGTTISTESTFSRPNNIPTDLK 584
cry6Aa -----NSNLEYKCPENNFMIIWYNNNSDWYNNNSDWYNN----- 475
cry7Aa PL-----SQRYRVIRIRYATNVSGQFNVIYINDKITLQTKFQNTVETIGEGKDLT----- 591
cry8Aa SL-----SQRYRVIRIRYASTTDFEFTLYLG-DTIEKNRFN---KTMNDGASLT----- 616
cry10Aa VRFLKNVSRQYQVIRIRYATNAPKTTVFLTGIDTISVELPSTTSRQNP-----ATDLT 601
cry16Aa RFKAELLDKKYRVIRIRYKCNYSKILIRKWKGEYIQQIHNIS--PTYGAFSY----- 603
cry19Ba RIK-LIASMTFIRIRIRYASNISGQMMINIGYQNPYFNIIPTTS--RDYTELK----- 593
cry24Aa FKVYCSELKNYRVIRIRYASHGNCQFLMKRWPSTGVAPRQWARHNVQGTFSNSMR----- 607
cry25Aa YDDRLTEDVPFIRIRIRCASIGVSTISVDNWGSSSPQVTVASTAASLDTLK----- 616
cry39Aa1 NVY-FPQPLDYRIRIRYSTSSNGYLYIYSPNTKIVYLPPTTLVDGQPTFDPMD----- 591
cry40Aa1 IP--ASTNKNYLVRVRYTSTSNGRLLVERWSPSSIINSYFFLPSTGPG--DSFG----- 605

Fig. 1D

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axmi008	---YSDFKFAEIIITPPLPSSNIQMDVEMQANSFQSDVNVVLDKIEFLPSNTTTLEYEGER	678
cry1Aa	---SGSFRTVGFTTTPFNFSNGSSVFTLSAHV-FNSGNEVYIDRIEFVPAEVTFEA---	EY 614
cry1Ac	---SSDFGYFESANAFTSSLGN---IVGVRN-FSGTAGVIIDRFEFIPVTATLEA---	EY 616
cry1Ia	---YKTFRTVGFTTTPFSFLDVQSTFTIGAWN-FSSGNEVYIDRIEFVPEVITYEA---	EY 651
cry2Aa	-----FSDINIGNIVASDNTNVTLDINVTLNSTGTPFDLMNIMFVPTNLPLY-----	633
cry3Aa1	---YNSFNLASFSTPFELSG--NNLQIGVTG-LSAGDKVYIDKIEFIPVN-----	652
cry3Bb	---YQTFDLATTNSNMGFSGDKNELIIGAES-FVSNEKIYIDKIEFIPVQL-----	652
cry4Aa	YKDFQYLEFSN---EVKFPAPNQNISLVFNRSVYTNTTVLIDKIEFLPITRSIREDREKQ	688
cry4Ba	YEEFRYKDPFDAIVPMRLSSNQLITIAIQPLNMTSNNQVIIDRIEIIIPITQSVLDETENQ	644
cry6Aa	-----	
cry7Aa	---YGSFGYIEYSTTIQFPDEHPKITLHLSL-LSNNSSFYVDSIEFIPVDVNYAE---	KE 644
cry8Aa	---YETFKFASFITDFQFRETQDKILLSMGD-FSSGQEVYIDRIEFIPVDETYEA---	EQ 669
cry10Aa	YADFGYVTFPRTVPNKTFEGEDTLLMTLYGTPNHSYN-IYIDKIEFIPITQSVLDYTEKQ	660
cry16Aa	---LESFTITTTTENIFDLTMEVITYPYGRQFVEDIPS--LILDKIEFLPTN-----	648
cry19Ba	---FEDFQLVDTSYIYSGGPSISS--NTLWLDNFSNGPVIIDKIEFIPLGITLNQAQGYD	648
cry24Aa	---YEAFKYLDIFTITP-----EENNFAFTIDLESGGDLFIDKIEFIPVSGSAFEGYKQ	659
cry25Aa	---YESFQYVSIPGNYYFDSAPRIRLLRQPG-----RLLVDRIEIIPVNFPLS-----	662
cry39Aa1	---FSAFRVVEVPASFR--ASVAG--YTNFTIEAGFGPVYIDKIEFIPDNTTTLEYEGGR	644
cry40Aa1	---YVDTLVTTFNQP-----GVEI IQNLDTPIN--VDKVEFIPVNSTALEYEGKQ	651
axmi008	DLEKTKNAVNDLFTN-----	693
cry1Aa	DLEAQKAVNELFTSSNQIGLKTDTVTDYHIDQVSNLVECLSDDEFCLDEKQELSEKVKHAK	674
cry1Ac	NLEAQKAVNALFTSTNQLGLKTNVTDYHIDQVSNLVTYLSDEFCLDEKRELSEKVKHAK	676
cry1Ia	DFEKAQEKVTALFTSTNPRGLKTDVKDYHIDQVSNLVESLSDEFYLDKRELFEIVKYAK	711
cry2Aa	-----	
cry3Aa1	-----	
cry3Bb	-----	
cry4Aa	KLETVQQIIINTFYANPIKNTLQSELTDYDIDQAANLVECI SEELYPKEKMLLLDEVKNAK	748
cry4Ba	NLESEREVVNALFTNDADALNIGTTDYDIDQAANLVECI SEELYPKEKMLLLDEVKNAK	704
cry6Aa	-----	
cry7Aa	KLEKAQKAVNTLFTE-GRNALQKDVTDYKVDQVSILVDCISGDLYPNEKRELQNLVKYAK	703
cry8Aa	DLEAAKKAVNALFTNTKD-GLRPGVTDYEVNQAANLVECLSDDLYPNEKRLLFDVREAK	728
cry10Aa	NIEKTQKIVNDLFTN-----	675
cry16Aa	-----	
cry19Ba	TYDQANANGMYHQNYSNSGYNYNQEYNTYYQSYNN-----	682
cry24Aa	NIEKTQKAVNDLFIN-----	674
cry25Aa	--EQENKSVDSLFIN-----	675
cry39Aa1	DLEKTKN-AVNDLFTN-----	659
cry40Aa1	SLEKAQDVVNDLFTN-----	666

Fig. 1E

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axmi008-orf2	MSPMFTSSTKNTLKIETTDYEIDQAAISIECMSDEQNPOEKIMLWDEIKLAKQLSQSRNL	60
cry19Aa-orf2	VNFMLTSGAKNMLKLETTDYEIDQMANAIENMSGEQYSQEKMMQWHDIKYAKQLSQARNL	60
crybun2orf2	---MFISNIKNTLKIETTDYEIDQAAISIECMSNEHSSKEEMMLWDEVKQAKQLSWSRNL	57
crybun3orf2	---MFTNGTKNTLKIETTDYEIDQAAISIECMSDEHSPKEKMMLWDEVKRAKLLSQSRNL	57
cry4Aa	INTFYANPIKNTLQSELTDYDIDQAAANLVEICISEELYPKKMLLLDEVKNAKQLSQSRNV	60
cry4Ba	VNALFTNDADKDALNIGTTDYDIDQAAANLVEICISEELYPKKMLLLDEVKNAKQLSQSRNV	60
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axmi008-orf2	LQNG---DFSGNDWTFGNDDIIIGSNNPFIKKGFLQMRGARDIYGTLPFTYICQKIDESKL	117
cry19Aa-orf2	LQNGDFEDLDFSG-WTTSNQMSIQADNATFKGNYLHMSGARDIYGTIFPTYIYQKIDESKL	119
crybun2orf2	LYNGDFEDVSNG-WKTSNTIEIRENSPVFKGHYLMFGARDIDGTLPFTYIYQKIEESKL	116
crybun3orf2	LQNGDFGDFYGNWKFNNIIIGSNNSIFKGNFLQMSGARDIYGTIFPTYIYQKIDESKL	117
cry4Aa	LQNGDFESATLG-WTTSNNTIQEDDPIFKGHYLMMSGARDIDGTIFPTYIFQKIDESKL	119
cry4Ba	LQNGDFESATLG-WTTSNNTIQEDDPIFKGHYLMMSGARDIDGTIFPTYIFQKIDESKL	119
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axmi008-orf2	KPYTRYRVRGVFGSSKDLKLMVTRYKEIDAIMNVPNDLAYMQPNPSCG---DYRCESSS	174
cry19Aa-orf2	KPYTRYLVRGVFGSSKDLMLVMRYKEIDTVMNVPNDIPYVPSMPVCNELYDGGQPPYN	179
crybun2orf2	KPYTRYRVRGVFGSSKDLKLMVTRYKEIDAMNVPNDLAYMQPTPSCG---DSRCESSS	173
crybun3orf2	KPYTRYRVRGVFGSSKDLRLMVTRYKEIDAMNVPNDLAYMQPNPSCG---DSRCESSS	174
cry4Aa	KPYTRYLVRGVFGSSKDLVVSRYGEEIDAIMNVPADLNYLYPS-----TFDCEGSN	172
cry4Ba	KPYTRYLVRGVFGSSKDLVVSRYGEEIDAIMNVPADLNYLYPS-----TFDCEGSN	172
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axmi008-orf2	QYVSQGYPTP-TDGYAPDMYACPQNIDRKHKVCHDRHPDFHIDTGEVDNTNTNVGIDVLL	233
cry19Aa-orf2	RHVGYYNPMP-VSQPSYSDTCQCTPGKKHVCHDSHQFKFHIDTGEVDYNTNLGIWVLF	238
crybun2orf2	RYVSQGYPTPVTGDGYASGRYACQSNRGTKHVKCHDRHPDFHIDTGEVDNTNTNVGIDVLF	233
crybun3orf2	QYVSQGYPTP-TDGYAPDRYACSSSDKKHVMCHDRHPDFHIDTGEVDNTNTNVGIDVLF	233
cry4Aa	RCETSAVPAN-IGNTSDMLYSCQYDTGKKHVVCQDSHQFSFTIDTGALDTNENIGVWVMF	231
cry4Ba	RCETSAVPAN-IGNTSDMLYSCQYDTGKKHVVCQDSHQFSFTIDTGALDTNENIGVWVMF	231
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axmi008-orf2	KISNPDGYATVGNLEVIEEGPLTGEALAHVKQKEKKWKQHMEKKRWETQQAYDPAKQAVD	293
cry19Aa-orf2	KISSPDGYATLDNLEVIEEGPVRGEAVTHVKQKEKKWNQMEKKRMETKRVDYDRAKQAVD	298
crybun2orf2	KISNPDGYATLGNLEVIEEGPLTGEALTHVKQKEKKWKQHMEKKRWETQQAYDPAKQAVD	293
crybun3orf2	KISNPDGYATLGNLEVIEEGPLTGEALTHVKQKEKKWKQHMEKKRWETQQAYDPAKQAVD	293
cry4Aa	KISSPDGYASLDNLEVIEEGPIDGEALSRVKHMEKKWNDQMEAKRSETQQAYDVAKQAID	291
cry4Ba	KISSPDGYASLDNLEVIEEGPIDGEALSRVKHMEKKWNDQMEAKRSETQQAYDVAKQAID	291
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axmi008-orf2	ALFTNE--QELHYHITLDHIQNADRLVQSIPIYVYHNWLPNAPGMNYDVYQELNARIMQGY	351
cry19Aa-orf2	ALFTG---EELNYDVTLSHIKNADDLVQSIPIYVHNEWLPDFPGMNYDIYQELNARIMQAR	355
crybun2orf2	ALFTNE--QELHYHITLDHIQNADRLIQAIPYVYHAWLPDAPGMNYDGYQGLNARIMQAY	351
crybun3orf2	TLFTNE--QELHYHITLDYIQTLDWYSRFPITYTMTGYRDAPGMNYDGYQGLNARIMQAY	351
cry4Aa	ALFTNVQDEALQFDTTLAQIQYAEYLVQSIPIYVYNDWLSDPVPGMNYDIYVELDARVAQAR	351
cry4Ba	ALFTNVQDEALQFDTTLAQIQYAEYLVQSIPIYVYNDWLSDPVPGMNYDIYVELDARVAQAR	351
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axmi008-orf2	NLYDARNVITNGDFTQGLQGWHATGNAAVQQMDGASVLVLSNWSAGVSQNLHAQDHHGYV	411
cry19Aa-orf2	YLYDARNVITNGDFAQGLQGWAEGKVEVQQMNGTSVLVLSNWSAGVSQNLHVQHPHGYL	415
crybun2orf2	NLYDARNVITNGDFTQGLTGWHAAGKAMVQQMDGASVLVLSNWSAGVSQNLHVQEHGGM	411
crybun3orf2	NLYDARNVITNGDFTKGLQGWAAGKAAVQQIDGASVLVLSNWSAGVSQNLHAQDHHGYM	411
cry4Aa	YLYDTRNIIKNGDFTQGVMGWHVTGNADVQQIDGVSVLVLSNWSAGVSQNVHLQHNHGYV	411
cry4Ba	YLYDTRNIIKNGDFTQGVMGWHVTGNADVQQIDGVSVLVLSNWSAGVSQNVHLQHNHGYV	411
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Fig. 2A

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axmi008-orf2	LRVIAKKEGPGKGYVTMMDCNQKQETLKFTSCEEGYMTKTVEVFPESDRVRIEIGETEGT	471
cry19Aa-orf2	LRVS AKKEGSGKGYVTRMSCNGKQETLTFTSCDGGYMTKTVEVFPESDRVRIEIGETEGS	475
crybun2orf2	LRVIAKKEGPGKGYVTMMDCNNGNRET LKFTSCEEGYMTKTVEVFPESDRVRIEIGETEGT	471
crybun3orf2	LRVIAKKEGPGKGYVTMMDCNQKQETLKFTSCEEGYMTKTVEVFPESDRVRIEIGETEGT	471
cry4Aa	LRVIAKKEGPGNGYVTLMDCEENQEKLTFSTCEEGYITKTVDFPDTDRVRIEIGETEGS	471
cry4Ba	LRVIAKKEGPGNGYVTLMDCEENQEKLTFSTCEEGYITKTVDFPDTDRVRIEIGETEGS	471
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axmi008-orf2	FYIDSIELLCMQGYDNNNNLHTGNMYEQSYNGNYNQNTSDVYYQGYTNMYNQDSSNMYNQ	531
cry19Aa-orf2	FYIESIELICMNGYTSNNNQNMNSMYDQSYSGNYSQNTSDMYDQG-----GSVAKFEK	528
crybun2orf2	FYVDSIELLCMQGYASNNNPHTGNMYGQSYNGNYNQNTSDVYHQGYTNMYNQNSSNMYNQ	531
crybun3orf2	FYVDSIELLCMQGYASNNNPHTGNMYGQSYNGNYNQNTSDVYHQGYTNMYNQNSSNMYNQ	531
cry4Aa	FYIESIELICMNE-----	484
cry4Ba	FYIESIELICMNE-----	484
	::***:**:	
axmi008-orf2	NYTNDDLHSGCTCNQGHNSGCTCNQGYNR	561
cry19Aa-orf2	E-----	529
crybun2orf2	NYTHNDDLHSGCTCNQGHNSGCTCSQG---	558
crybun3orf2	NYTHNDDLHSGCTCNQGHNSGCTCSQG---	558
cry4Aa	-----	
cry4Ba	-----	

Fig. 2B